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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/725,836	NELSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Krystyna Suchecki	2882	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ The drawings filed on 01 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Robert Villhard on 03/17/05.
3. The application has been amended as follows:
4. In Claim 11, replace line 5 as follows:  
--reflected x-ray backscatter signals;--
5. In Claim 11, replace line 6 as follows:  
--detecting said x-ray backscatter signals; and--
6. In Claim 12, replace line 5 as follows:  
--comprising alternating mask patterns, to produce x-ray backscatter--
7. In Claim 12, replace line 7 as follows:  
--recording the total x-ray backscatter signal for each mask--
8. In Claim 15, at line 3, delete "beams" and insert therein --beam--
9. In Claim 15, at line 4, delete "beams" and insert therein --beam--
10. In Claim 15, replace line 5 as follows:  
--creating reflected x-ray backscatter signals from said target;--
11. In Claim 15, replace line 6 as follows:

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--a detector for detecting the x-ray backscatter signals,--

12. In Claim 17, replace line 8 as follows:

-- x-ray backscatter signals;--

13. In Claim 17, replace line 9 as follows:

--a detector for detecting said x-ray backscatter signals;--

14. In Claim 18, delete "18" and insert therein --17--

***Allowable Subject Matter***

15. Claims 1-18 are allowed.

16. The following is an examiner's statement of reasons for allowance: Claims 1-7, 11, 12, 15 and 16 contain allowable subject matter for at least the reason that the prior art of record fails to teach or fairly suggest a method of x-ray imaging, and apparatus for same, comprising illumination of a target with an x-ray source using Hadamard transform mask patterns thereby creating backscatter x-ray signals as claimed. Though Barrett (US 3,936,639) and Lux (US 4,241,404) teach the use of Hadamard patterns to alter a radiation source for x-ray imaging, they do not teach the use of a backscatter system. Claims 8-10, 13, 14, 17 and 18 contain allowable subject matter for at least the reason that the prior art of record fails to teach or fairly suggest an apparatus, or method, for x-ray imaging comprising a source of beams for passing beams through pairs of alternating transform patterned modulated matrix masks for creating backscatter x-ray signals that are displayed after performance of an inverse Hadamard transform as claimed. While Tancrell (US 4,075,483) teaches that multiple transform masks may be used in a system with inverse processing to create an image for display, the masks are not modulated nor are they alternating. Brady (US 2004/0095626) teaches the use of multiple Hadamard filters and

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Hadamard transform processing, but not in backscatter x-ray systems. Gerchberg (US 2003/0202634) is of interest for teaching five or six filters that can be modulated to change the filter pattern. The filters can be Hadamard transform patterned, though not explicitly in alternating pairs. The filters appear after the target, and therefore do not affect the source of beams impinging the target.

17. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495. The examiner can normally be reached on M-F, 9-5.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJ

  
Craig E. Church  
Primary Examiner